

ABSTRACT OF THE DISCLOSURE

By a non-selective epitaxial growth method, an SiGe film is grown on the whole surface of a silicon oxide film so as to cover an inner wall of a base opening. Here, such film forming conditions are selected that, inside the base opening, a bottom portion is formed of single crystal, other portions such as a sidewall portion are formed of polycrystalline, and a film thickness of the sidewall portion is less than or equal to 1.5 times the film thickness of the bottom portion. In this non-selective epitaxial growth, monosilane, hydrogen, diborane, and germane are used as source gases. Then, flow rates of monosilane and hydrogen are set to 20 sccm and 20 slm respectively. Also, a growth temperature is set to 650°C, a flow rate of diborane is set to 75 sccm, and a flow rate of germane is set to 35 sccm.